

REMARKS**Status of the Claims**

Upon entry of the foregoing amendment, claims 10-30 will be pending. Claim 30 has been amended to resolve improper multiple dependency. No new matter has been added. In the Office Action, claims 10-29 were rejected, and claim 30 was objected to.

In view of the foregoing amendment and the arguments that follow, Applicants respectfully request withdrawal of all rejections or objections upon reconsideration.

The Present Invention

The present invention relates to a catalyst, its preparation, and its use, especially for the production of 1,2-dichloroethane by the oxychlorination of ethylene in a fluidizable or fixed-bed reactor.

Objections Under 37 C.F.R. 1.75(c)

Claim 30 was objected to under 37 C.F.R. 1.75(c) as allegedly being in improper form because multiple dependent claims must list the claims they depend from in the alternative and, thus, was not treated on the merits. Claim 30 has been amended to depend from any one of claims 1 to 6 or 9 to 16. Applicants respectfully request that claim 30 be treated on the merits.

Rejections Under 35 U.S.C. §102(b)

Claims 10-29 stand rejected as allegedly being anticipated by Convers et al. (U.S. Pat. No. 4,460,699, "Convers"). Applicants respectfully traverse this rejection.

In order for a prior art reference to be anticipating, "every element of the claimed invention must be literally present, arranged as in the claim." *Richardson v. Suzuki Motor Co., Ltd.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). Applicants respectfully request reconsideration of this rejection, as the claims recite a catalyst composed of layers arranged in an order that is not disclosed in the Convers reference.

The Office Action asserts, *inter alia*, that Convers “discloses a fixed bed catalyst for oxychlorination comprising thin layers of high specific surface area material, gamma alumina, and salts of copper, magnesium, and lithium.” (Office Action at page 3.) Convers, however, describes a catalyst in which an oxychlorination agent (e.g. copper) is layered onto or dispersed in a carrier material (e.g. magnesia alumina) layered on a particle (e.g. alpha alumina). A metal salt layer may be present on top of the oxychlorination agent. (See, for example, Convers claim 6 at column 12, lines 14-43). In contrast, the claims of the present invention recite a particle consisting essentially of **gamma** alumina, **followed by** a layer containing magnesium and **then** a layer containing copper and, optionally, lithium. (See, for example, claims 10 and 16, and the specification as originally filed, page 4, lines 35-37.) Convers does not disclose or suggest a particle consisting essentially of gamma alumina covered by a layer of magnesium and then a layer of copper (with or without lithium). Placing the magnesium-containing layer adjacent to the gamma alumina layer allows the magnesium salt to neutralize acidic centers on the gamma alumina surface, thus rendering the centers unavailable for reaction with the copper and increasing the amount of copper available for catalyzing the oxychlorination reaction. See the specification as originally filed, page 5, lines 23-27, page 6, lines 11-12 and 23-34, and page 7, lines 12-17. Convers does not disclose or suggest the importance of such an interaction between magnesium and the surface of the gamma alumina.

Accordingly, the present claims are not anticipated by Convers. Applicants respectfully request that the rejection under 35 U.S.C. §102(b) in view of U.S. Pat. No. 4,460,699 be reconsidered and withdrawn.

Applicants note that U.S. Patent numbers 4,908,343 and 5,380,697 were cited but not relied upon in the present Office Action. Applicants reserve the right to comment on these references at such time when and if any rejection over them is clearly articulated.


**Conclusion**

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made."

Applicants believe that the foregoing constitutes a full and complete response to the Office Action of record. Accordingly, an early and favorable Action is respectfully requested. Applicants invite the Examiner to contact the undersigned at 215-568-8352 to discuss any issues unresolved by this response.

Respectfully submitted,

Date: January 22, 2002


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TC 1700

DOCKET NO. CARP-0083



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claim 30 has been amended as follows:

30. (Amended) A process for the catalytic gas phase oxychlorination of ethylene comprising reacting ethylene, hydrogen chloride and a source of oxygen in the presence of the catalyst of any one of claims 1 to 6 [and] or 9 to 16.

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